Systems Integration—User Perspectives

SYSTEMS INTEGRATION—USER PERSPECTIVES

Topics

- Changing Environment In Information Systems
- Systems Integration—A Response
- SI Projects—Structure/Composition
- Future Trends—Mix & Structure
- Buyer Issues—Vendor Selection
- Future User Perspectives
- Conclusions/Conjectures

INFORMATION SYSTEMS

Major Issues—1988

- Rising Management Expectations
- User Demands for Increasingly Complex Solutions
- Managing the Technology Investment
- Integration—Data/Applications/Technology
- "Mission Critical" Solutions

INFORMATION SYSTEMS

Management Focus

Area	Requirements
Integration	Applications/Data/Technology
Management of IS	Productivity of IS Simplification of Support User-Managed Development
Mission—Critical Systems	Support the Future Business Environment

BLOCKING FACTORS

- Infrastructure Gridlock
- Lack of Qualified In-House Personnel
- Existing Applications Portfolio

APPLICATION DEVELOPMENT—MAJOR PROJECTS

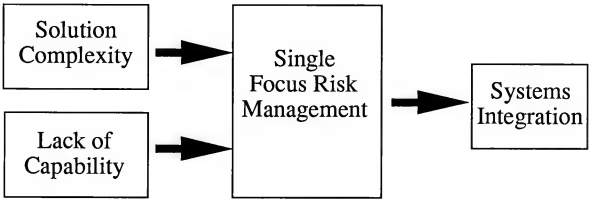
Source of Resources
1988 Survey
(Percent)

Source of Resources	Package Software	Custom Development	Total
Internal	22	78	56
Internal & External	52	48	44
Total	35	65	100

- Growing Trend Toward the Use of External Resources
- Growing Use of Applications Software in Projects Involving External Resources

SYSTEMS INTEGRATION—A RESPONSE

Blocking Factors Lead to Systems Integration



IS & USER MANAGEMENT VIEWPOINTS

Benefits of Systems Integration

- Rapid Response To Changing Business Needs
- Reduced Risk Of Systems Development
- "Acquire" Project Management Skills
- Integrate Fragmented Systems
- Use New Technology To Achieve Effective Solutions
- Acquire Industry Expertise
- Increase Project Management Focus

CHARACTERISTICS OF SI PROJECTS

Federal and Commercial

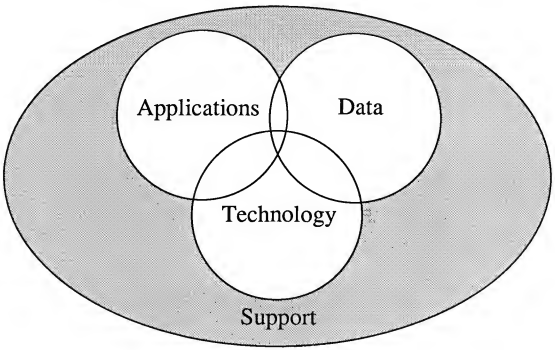
- Project Characteristics:
  - Mission Critical
  - Multivendor In Nature
  - Complex
- Contractual Characteristics:
  - Single Source Accountability
  - Transfer Some Degree of Risk to the Vendor

COMMERCIAL VERSUS FEDERAL SYSTEMS INTEGRATION CHARACTERISTICS

Characteristics	Commercial	Federal
Customers		
Requirements Knowledge	Low	High
Technical Knowledge	Variable	High
Interface	Multiple	Single
Vendors		
Vertical Expertise	Preferred	Mandatory
Customer Base	Leverageable	Reference
Conceptual Strength	Required	Optional
Reputation	Media-Based	Historic
Business Conditions		
Competitive Bids	Optional	Required
Bid Complexity	Variable	High
Expenditure Commitment	Deferrable	Guaranteed
Risk Exposure	High	Contained
Contract Type	Fixed-Price	Combination*
Price Restrictions	Competitive	Ceilings
Bonuses	Unlikely	Award/Incentive
Penalties	Unlikely	Exception

*Federal Canadian Fixed Price

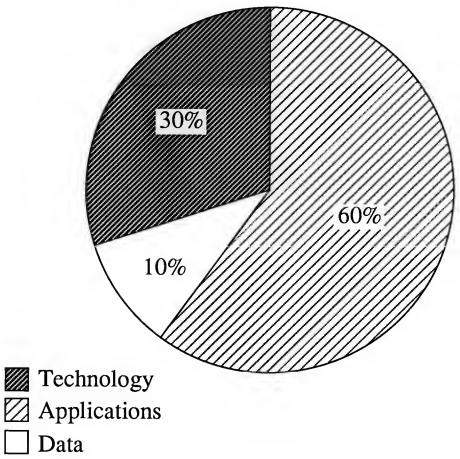
SI PROJECT CLASSIFICATIONS



SI PROJECT CLASSIFICATIONS

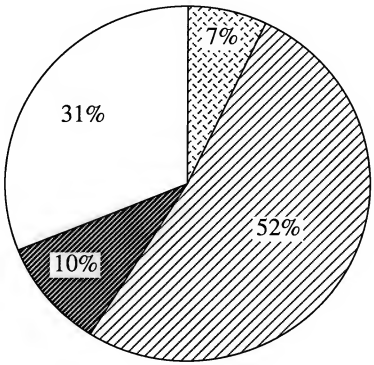
- Applications Level
  - Focused on Specific Business Solutions
  - Driven by Executive/User Management
  - Short-Term Payout with High Visibility
- Data Level
  - Focused on Providing Data Infrastructure
  - Driven by IS or Division Management
  - Provides Platform for "Suites" of Applications
- Technology Level
  - Focused on Total Delivery Capability
  - Almost Universally IS Driven
  - Provides Standard Environment/Tools

DISTRIBUTION OF PROJECTS BY CLASS



EXPENDITURES BY COMPONENT GROUP

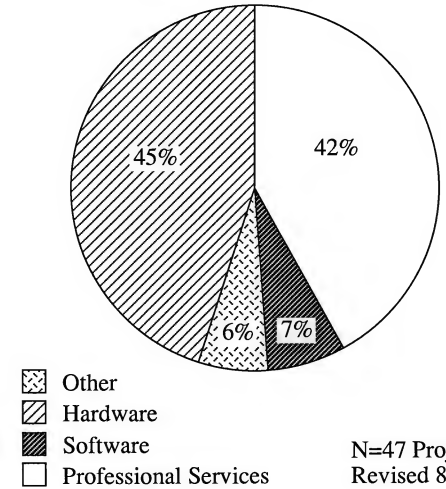
1987 Commercial Project Sample



N=45 Projects
Revised 8/88

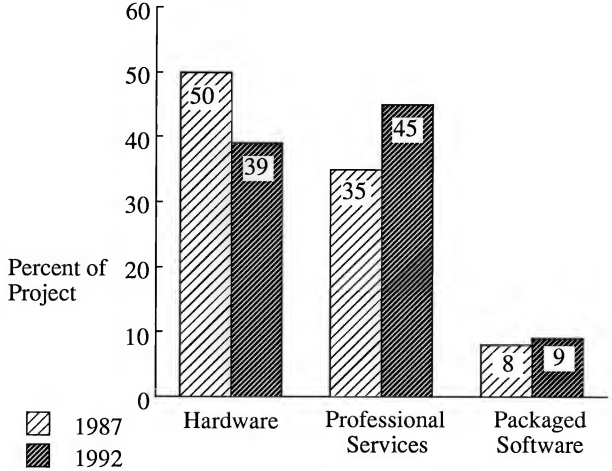
EXPENDITURES BY COMPONENT GROUP

1987 Federal Project Sample



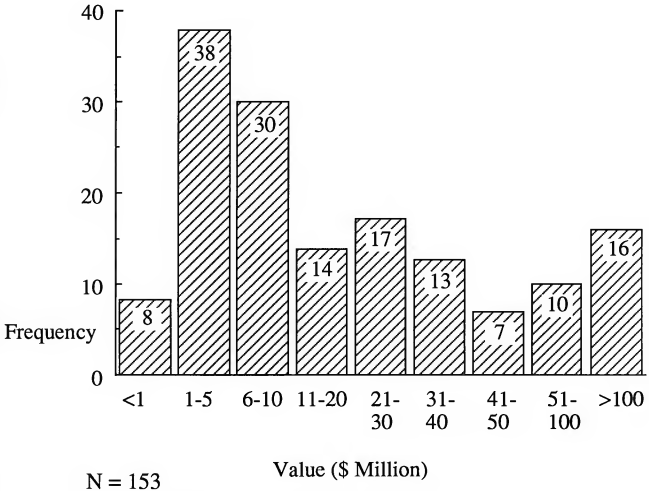
TRENDS IN SI PROJECT COMPOSITION

Federal & Commercial
(Based on 1987 Forecast)



DISTRIBUTION OF PROJECTS BY VALUE

Federal and Commercial



N = 153
Revised 7/88

INPUT

CHANGING MIX OF AVAILABLE PROJECTS

- INPUT Forecasts Over the Next Five Years
  - Decrease In Percentage Of *Technology* Projects
  - Continuous Increase In *Applications* SI Projects
  - Rapid Acceleration In *Data* Oriented Projects
- Key Factors Influencing the Mix
  - Decreasing Backlog - Hardware Integration
  - Increasing Compliance With Open Standards
  - Increased Dependencies On Relational Data Structures
  - Increasing Focus On Mission Critical Applications Systems
  - Dominance Of User Defined Requirements

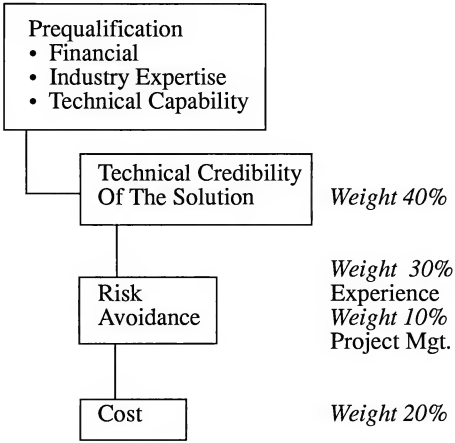
BUYER ISSUES—VENDOR SELECTION

- Selection Criteria/Process
- Environmental/Organizational Impacts
- Project Management Issues
- End User Perspectives
- Conclusions

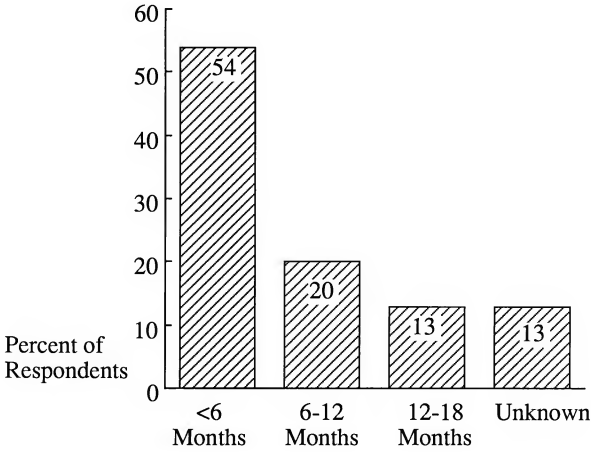
VENDOR SELECTION CRITERIA

Type	Percent of Respondents
Industry Experience	86
Application Knowledge	86
Cost/Performance	86
SI Experience	79
Project Management Skills	64
Support Skills	64
Service Orientation	50
On-Site Visits	43
References	43
Alliances	21

VENDOR SELECTION PROCESS



DURATION OF VENDOR SELECTION PHASE



ENVIRONMENTAL & ORGANIZATIONAL IMPACT

- Open Communication Key to Success
  - Address Alternative Opinions
  - Opportunity for Second Guessing by IS
  - Involve the End User
- Manage the Interface with Project Staff
  - Appears to Be a Training Ground for Vendor Staff
  - Maintain Continuity of Vendor Project Staff
- Monitor Standards of Quality
  - Adopt Buyer's if Higher

PROJECT MANAGEMENT

- More Critical than the Ratings Indicate
- Continuity of Vendor Project Manager
  - The Good Ones Get Reassigned Too Soon
  - One Manager for the Life of the Project
- Managing the Subcontractors Key—Prime Vendor Must Keep Control
  - Buyer Tendency to Go around the Prime
- Use a Third Party as QA
- Keep the Users Involved—They Can Become the Vendor's Ally

END-USER PERSPECTIVE—INVOLVEMENT

A "Single" Objective

The User Becomes the "Champion."

CONCLUSIONS

Issues and Overall Success

Rank	High Success	Medium Success	Low Success
1	Environ. & Org. Impact	Bid Process	Acceptance Criteria
2	User Perspective	Environ & Org. Impact	Project Definition
3	Selection Criteria	Project Definition	Selection Criteria
4	Project Definition	User Perspective	Bid Process
5	Bid Process	Selection Criteria	Technology Review
6	Acceptance Criteria	Technology Review	Project Management
7	Project Management	Project Management	Environ. & Org. Impact
8	Technology Review	Acceptance Criteria	User Perspective

FUTURES

- Role of The End User
  - Controlling Strategic Information Systems Decisions
  - Doing the Majority of the Application Development
  - Managing the Processing at Tiers 2 and 3
  - Working from a Broad Base of Computing Experience

- Indicators of Major Change
  - Growing Use of Outsiders and Package Solutions
  - Distribution of Development as well as Processing
  - Emphasis on Standards
  - Focus on Top-Level Role and Priorities

FUTURES

Information Systems Responsibilities

- Providing Corporate Strategic Support
- Managing Architecture
- Application Planning versus Application Development
- Managing the Technology/Data

Information Systems Organization—1990s

- Smaller, More Flexible and Responsive
- Expert Based—Technology and Business
- Consultant Style—Information Engineers and Solution Builders
- Champion for Information Technology —An Internal "SI Competitor"

CONCLUSIONS/CONJECTURES

- Shifting Source Of Development Resources

  Inside ——→ *Outside*

- On-Going Change In Buyer's Identity

  IS Management ——→ *User*

- Changing Structure Of Project Composition

  Hardware ——→ *Professional Services*

- Changing Mix Of Available Projects

  Technology ——→ *Applications*